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10/501,435	07/13/2004	Tatsuya Kato	890050.485USPC	7431

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EXAMINER	
PATEL, GAUTAM	

ART UNIT	PAPER NUMBER
2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/501,435	KATO ET AL.	
	Examiner	Art Unit	
	Gautam R. Patel	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 9-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 9-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment/Arguments:

1. This is in response to amendment filed on 7/23/07.

2. Claims 1-4, and 9-21 remain for examination. Claims 20-21 are newly presented for examination.

Drawings/Objection

3. The drawings remains objected for following reasons:

The drawings are objected to under 37 C.F.R. § 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, steps of "setting recording powers of top pulse and recording information" must be shown in diagram or the features cancelled from the claims. Since claims are method claims, what is being claimed underneath are steps by definition. Removing words "steps" do not change the fact the claim is a **method claim** and NOT an apparatus claim. Therefore simply pointing towards figures showing arrangement of pulses does not satisfy the requirement as required by 37 C.F.R. § 1.83(a)

No new matter should be entered.

Applicant is required to submit a proposed drawing correction in response to this Office Action. Any proposal by the applicant for amendment of the drawings to cure defects must consist of following:

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment, and may be ***accompanied by a marked-up copy of one or more of the figures being amended, with annotations***. Any replacement drawing sheet ***must be identified in the top margin as "Replacement Sheet"*** and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. ***Any marked-up (annotated) copy showing changes must be labeled "Annotated Marked-up Drawings" and accompany the replacement sheet in the amendment (e.g., as an appendix).***

a proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. Correction may not be held in abeyance.

Correction are required.

Claim Rejections - 35 U.S.C. § 112

4. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

a. Claim 11 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 10 recites the broad recitation of the range of "shorter than 30 ns", and the claim 11 recites the same range to be 20 ns, which is the narrower statement of the original range 30 ns.

b. Claim 19 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19, lines 4-8 are confusing and unclear. It is not clear how "to an optical recording medium...." Relates to lines above which has ended with full stop. Also how these limits the claim above.

NOTE: Typographical error is assumed for the examination purposes of claim 19. Since no underline has been drawn to the added material and also claim lines 4-8 do not make any sense with respect to claim 19 lines 1-3 or claim 17 from which claim 19 depends from.

Claim Rejections - 35 U.S.C. § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 9-12, 14, 16, 18 and 20-21 are rejected under 35 U.S.C. § 102(e) as being anticipated by Miyamoto et al., US. patent 6,236,635 (hereafter Miyamoto).

As to claim 1, Miyamoto discloses the invention as claimed [see Figs. 6 and 11-12] including setting recording powers and having second recording power lower than the first recording power, comprising the steps of:

setting recording powers of a top pulse and/or a last pulse of a laser beam used for forming at least one recording mark contained within said group to a second recording power [power P3 and P9] lower than a first recording power [power P7] which is a recording power of an intermediate pulse(s) between the top pulse and the last pulse [col. 9, lines 12-28 and fig. 6]; and

setting a pulse width of a cooling pulse of laser beam used for forming at least one recording mark contain within said group to be wider [2.25T] than the pulse width of each of the top pulse [1T], intermediate pulse(s) [1/2T] and last pulse [1T], thereby recording information in the optical recording medium [col. 12, lines 36-50; col. 14, line 56 to col. 15, line 16 & figs. 11-12].

6. The aforementioned claim 3, recites the following steps, inter alia, disclosed in Miyamoto:

the first recording power Pw1 and the second recording power Pw2 are set so that Pw2/Pw1 is smaller than 0.9 [col. 9, lines 12-28].

NOTE: Miyamoto discloses the range of this power to be 0.1 mw to 2.0 mw, which falls within the range of 0.9, thus satisfying 0.9 value.

7. The aforementioned claim 9, recites the following steps, inter alia, disclosed in Miyamoto:

the pulse width of the cooling pulse is set to be equal to or wider [2.25T] than 1.0 T [col. 12, lines 36-50; col. 14, line 56 to col. 15, line 16 & figs. 11-12].

8. The aforementioned claim 10, recites the following steps, inter alia, disclosed in Miyamoto:

a length of a shortest signal between neighboring recording marks is equal to or shorter than 30 ns [col. 6, lines 7-20].

9. The aforementioned claim 11, recites the following steps, inter alia, disclosed in Miyamoto:

the length of the shortest signal between neighboring recording marks is equal to or shorter than 20 ns [col. 6, lines 7-20].

10. As to claims 12, 14, 16 and 18, they are apparatus claims corresponding to claims 1, 3, 1 and 3 respectively and they are therefore rejected for the similar reasons set forth in the rejection of claims 1, 3, 1 and 3respectively, above.

11. The aforementioned claim 20, recites the following steps, inter alia, disclosed in Miyamoto:

setting a recording power of an intermediate pulse to a first power [fig. 6, level P7];

setting recording powers of a top pulse and a last pulse of a laser beam used for forming at least one recording mark to a second recording power [power P3 and P9] lower than the first recording power [power P7] which is a recording power of an intermediate pulse[col. 9, lines 12-28 and fig. 6];

setting a bottom most power level for the laser pulse while the mark is being recorded, the bottom most power being lower than the first power and the second power and also being lower than a median power and being positioned between the top pulse and an intermediate pulse and the last pulse [col. 12, lines 36-50; col. 14, line 56 to col. 15, line 16 & figs. 11-12];

setting a pulse width of a cooling pulse of laser beam used for forming at least one recording mark contain within said group to be wider [2.25T] than the pulse width of each of the top pulse [1T], intermediate pulse(s) [1/2T] and last pulse [1T], thereby recording information in the optical recording medium [col. 12, lines 36-50; col. 14, line 56 to col. 15, line 16 & figs. 11-12].

12. The aforementioned claim 21, recites the following steps, inter alia, disclosed in Miyamoto:

setting the pulse width of the cooling pulse [2.25T] to be grater than or equal to than 3 times wider than any intermediate pulse [0.5T] of the pulse train for forming the recording mark [col. 12, lines 36-50; col. 14, line 56 to col. 15, line 16 & figs. 11-12].

Claim Rejections - 35 U.S.C. § 103

13. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 13, 15, 17 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyamoto as applied to claims 1, 3, 12, 14, 16 and 18 above.

As to claim 2 Miyamoto discloses all of the above elements, including middle level pulse power level higher than the first and last pulse. Miyamoto does not specifically disclose [in this embodiment] that first and last pulse are set at equal power level to the extent claimed.

However, equal power level of first and last pulse are well known in the art for a long time. More importantly Miyamoto teaches power level of first pulse and last pulse to be equal see fig. 3, 6 & 7, power level P3 [col. 6, line 51 to col. 7, line 6].

One of ordinary skill in the art at the time of invention would have realized that from the clear suggestion given by Miyamoto that power level P3 [first pulse] and power level P9 [last pulse] in fig. 6 can be the same [col. 9, lines 18-19].

Therefore, it would have been obvious to have used equal power level for first and last pulse in the system of Miyamoto as taught by Miyamoto because one would be motivated to reduce number of parts that are required to produce pulses in the system of Miyamoto and provide faster signal controls and consolidate production of the waveforms thus making system less expensive.

14. As to claim 4, it is rejected for the similar reasons set forth in the rejection of claim 3 above.

15. As to claims 13, 15, 17 and 19, they are apparatus claims corresponding to claims 2, 3, 2 and 3 respectively and they are therefore rejected for the similar reasons set forth in the rejection of claims 2, 3, 2 and 3 respectively, above.

16. Applicant's arguments filed on 7/23/07have been fully considered but they are not deemed to be persuasive for the following reasons.

In the REMARKS, the Applicant argues as follows:

A) That: "First, applicants have amended claim 1 to remove ant reference to particular steps. This should be sufficient to overcome the objection.

In addition, Applicants respectfully traverse the objection. Figures 4, 5, 6 and 7 each show a method of recording data including "setting recording powers of top pulse and recording information"." [page 9, paragraph 4-5; REMARKS].

FIRST: Please see objection to drawings as maintained above.

SECOND: Since claims are method claims [see line 1 of claim 1], what is being claimed underneath are steps by definition. Removing words "steps" do not change the fact the claim is a **method claim** and NOT an apparatus claim. Therefore simply pointing towards figures showing arrangement of pulses does not satisfy the requirement as required by 37 C.F.R. § 1.83(a). Boxes showing these methods steps of setting of powers etc., must be shown as required.

B)That; "This location of the text of Miyamoto does not discuss the width of the cooling pulse at all. In addition, applicants have studied Fig. 6 and 7 and these clearly show a cooling pulse of the same width as both the first and the last pulse. Therefore, there is no teaching ..." [page 10, paragraph 5; REMARKS].

FIRST: The Applicants are correct typographical error was made in pointing towards this limitation. The actual figure is 11-12 and text is col. 12, lines 36-50 and col. 14, line 57 to col. 15, line 16.

SECOND: It should also be pointed out that Miyamoto clearly teaches that cooling pulse width can be adjusted to proper width for high density recording [col. 15, lines 3-12].

17. Applicant's amendment and new claims necessitated the new grounds of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact information

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is 571-272-7625. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2600) where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Dwayne Bost, who can be reached on (571) 272-7023.

Any inquiry of a general nature or relating to the status of this application should be directed to the Electronic Business Center whose telephone number is 866-217-9197 or the USPTO contact Center telephone number is (800) PTO-9199.

GAUTAM R. PATEL
PRIMARY PATENT EXAMINER

Gautam R. Patel
Primary Examiner
Group Art Unit 2627

August 15, 2007